

Name Key

Date _____

Skip 3, 14
17, 22
24

LESSON 6.1

Practice C

For use with pages 356-363

1 qt = 32 oz
16 cups = 1 gallon

4 qt = 1 gallon

7:2200

Simplify the ratio.

1. 1 oz : 2 qt

1:64

2. $\frac{2 \text{ cups}}{1 \text{ gallon}}$

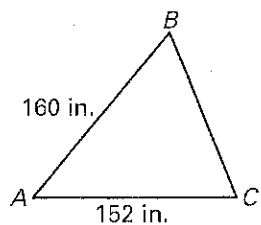
$\frac{2}{16} = \frac{1}{8}$

4 seconds : 1 year

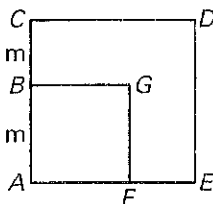
4. 7 qt : 550 gallons

Find the ratio of AB to AC in simplest form.

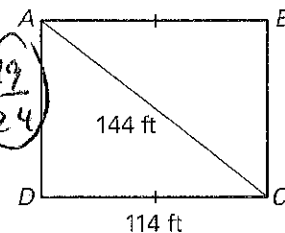
5. $\frac{160}{152} = \frac{20}{19}$



6. $\frac{57}{95} = \frac{3}{5}$



7. $\frac{114}{144} = \frac{19}{24}$



Let $x = 8$, $y = 6$, and $z = 5$. Write the ratio in simplest form.

8. $3z : 2y$

5:4

9. $2z : y + x$

10:14 5:7

10. $\frac{3z + 2y}{4z}$

$\frac{27}{20}$

11. $\frac{(x + y) - z}{2y}$

$\frac{9}{12} = \frac{3}{4}$

The perimeter and the ratio of the length to the width of a rectangle are given. Find the length and width of the rectangle.

12. Perimeter: 132 cm

$l : w = 7 : 4$

$14x + 8x = 132$

$l = 42 \text{ cm}$
 $w = 24 \text{ cm}$

13. Perimeter: 280 ft

$l : w = 11 : 9$

$22x + 18x = 280$

$l = 77 \text{ ft}$
 $w = 63 \text{ ft}$

14. Perimeter: 420 yd

$l : w = 17 : 13$

$34x + 26x = 420$

$l = 119 \text{ yd}$
 $w = 91 \text{ yd}$

The measures of the angles of a triangle are in the extended ratio given.

Find the measures of the angles of the triangle.

15. 2:5:5

$30^\circ, 75^\circ, 75^\circ$

$12x = 180$

$x = 15$

16. 3:7:10

$27^\circ, 63^\circ, 90^\circ$

$20x = 180$

$x = 9$

17. 7:16:22

$28^\circ, 64^\circ, 88^\circ$

$45x = 180$

$x = 4$

Solve the proportion.

18. $\frac{7}{12} = \frac{x}{48}$

28

19. $\frac{11}{a} = \frac{55}{75}$

15

20. $\frac{14}{y-5} = \frac{2}{3}$

26

21. $\frac{2z}{27} = \frac{3z+9}{81}$

3

22. $\frac{1248}{1768} = \frac{b+2}{b+7}$

$12b + 84 = 176b + 124$

$5b = 56$

$10 = b$

23. $\frac{9}{s} = \frac{s}{16}$

$s^2 = 9 \cdot 16$

$s = 12$

24. $\frac{19}{32} = \frac{7d+3}{15d-11}$

25. $\frac{x}{111} = \frac{5x-28}{333}$

$3x = 5x - 28$

$2x = 28$

$x = 14$

26. $\frac{24x}{6x+4} = \frac{x}{25}$

$5x^2 = 9 \cdot 16$

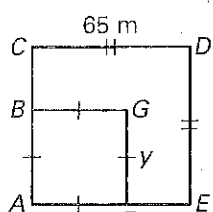
$5x = 12$

$3x + 2 = 50$

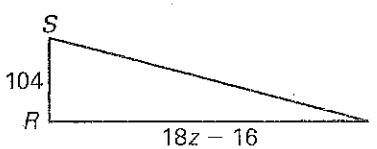
$x = 16$

Use the given ratio and information in the figure to find the value of the variable(s).

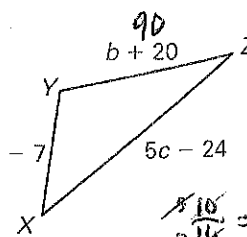
27. $CD : AB = 5 : 3$



28. $RS : RT = 13 : 25$



29. $XY : YZ : XZ = 7 : 10 : 14$



$\frac{13}{25} = \frac{104}{18z-16}$

$2600 = 13(18z-16)$

$2600 = 18z - 16$

$12 = z$

$\frac{7}{10} = \frac{b-7}{b+20}$

$10b - 70 = 7b + 140$

$3b = 210$

$b = 70$

LESSON
6.1**Practice C** *continued*
For use with pages 356-363Find the geometric mean of the two numbers. $\frac{2}{x} = \frac{x}{26}$

30. 6 and 24 $\frac{6}{x} = \frac{x}{24}$

31. 7 and 28 $\frac{7}{x} = \frac{x}{28}$

32. 4 and 12 $x = 4\sqrt{3}$

33. 9 and 12 $x = 30$

34. 15 and 45

35. 12 and 48

The area and the ratio of the length to the width of a rectangle are given.
Find the length and width of the rectangle.

36. Area: 192 ft² $3x \cdot x = 192$

37. Area: 294 yd²

$l:w = 3:1$

$3x^2 = 192$

$l:w = 3:2$

$6x^2 = 294$

$x^2 = 49$

$x = 7$

$l = 24 \text{ ft}$ $w = 8 \text{ ft}$

$x^2 = 64$
 $x = 8$

$l = 21 \text{ yd}$ $w = 14 \text{ yd}$

The three coordinate points are collinear. Use slopes to write a proportion and to find the value of a .

38. $(-4, 1), (-1, 2), (5, a)$

39. $(4, 5), (1, 2), (a, 0)$

40. **Rectangles** The ratio of the length to the width of one rectangle is proportional to the ratio of the length to the width of a smaller rectangle. Describe the circumstances for which this proportion involves a geometric mean.41. **Carpet Cleaning** A carpet cleaning solution calls for a mixture of 1 ounce of cleaner per 2 quarts of water. You use a total of 13 gallons of water in mixing the solution according to these directions. How much cleaning solution do you use?

$\frac{1 \text{ oz}}{2 \text{ qt}} = \frac{x}{52 \text{ qt}}$

$x = 26 \text{ qt}$

42. **Sports Training** Over a given period of time, you can lose weight if your body burns more Calories than it consumes. Specifically, it takes a difference of 3500 Calories to lose 1 pound of body weight. Suppose your total body weight decreases by 42 ounces while you are training for a sport. How many more Calories has your body burned than it has consumed during this time?

$\frac{3500}{16} = \frac{x}{42}$

$x = 9187.5 \text{ calories}$

43. **Currency Exchange** You and a friend win a free trip to Europe. The plane trip includes a layover in Canada before continuing service to Europe. At the time of your trip, the currency exchange rates are 1 U.S. dollar per 1.14 Canada dollar and 1 U.S. dollar per 0.84 Euros.

- a. During the layover, you purchase a book that costs \$20 in Canadian currency. How much does the book cost in U.S. dollars?
- b. Once you arrive in Europe, you exchange \$80 in U.S. currency. How many Euros do you get for that amount?
- c. Your friend exchanges \$25 in Canadian currency for Euros. How many Euros does your friend receive?

$\frac{1}{1.14} = \frac{x}{20}$ \$17.54

$\frac{1.14}{.84} = \frac{25}{x}$

$1 \cdot 1.14 \cdot .84$

$x = 18.42$

$\frac{1}{.84} = \frac{80}{x}$ 67.20

LESSON
6.3
Practice C

For use with pages 371-379

List all pairs of congruent angles for the polygons. Then write the ratios of the corresponding sides in a statement of proportionality.

- $\triangle STU \sim \triangle CDE$ $\angle S \cong \angle C$ $\angle T \cong \angle D$ $\angle U \cong \angle E$ $\frac{ST}{CD} = \frac{TU}{DE} = \frac{SU}{CE}$
- $\triangle LMN \sim \triangle GHI$
- quadrilateral $CDEF \sim$ quadrilateral $MNKL$

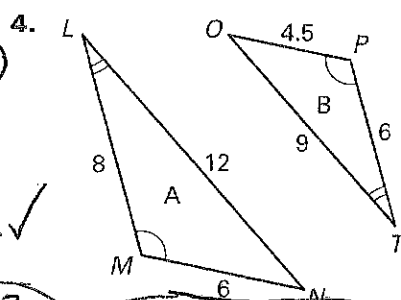
Determine whether the polygons are similar. If they are, write a similarity statement and find the scale factor of Figure A to Figure B.

Angles ✓
(3rd 2 Triangles)

$$\frac{6}{4.5} = \frac{8}{6} = \frac{12}{9}$$

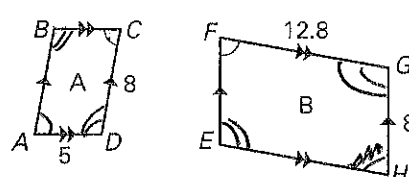
$$\frac{4}{3} = \frac{4}{3} = \frac{4}{3} \checkmark$$

S.F. 4:3



$\triangle LMN \sim \triangle POT$

5.



Angles ✓
(Cons. Int.)

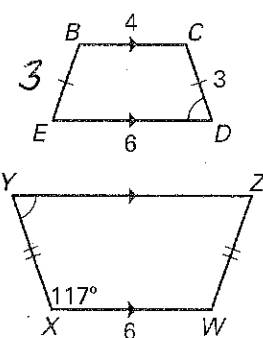
$$\frac{5}{8} = \frac{8}{12.8} \checkmark$$

S.F. 5:8

$ABCD \sim EFGH$ or $HGFE$

In the diagram at the right, quadrilateral $BCDE \sim$ quadrilateral $WXYZ$.

- Find the scale factor of quadrilateral $BCDE$ to quadrilateral $WXYZ$. $2:3$
- Find the scale factor of quadrilateral $WXYZ$ to quadrilateral $BCDE$. $3:2$
- Find XY . 4.5
- Find $m\angle C$. 117°
- Find the perimeter of quadrilateral $WXYZ$. $\frac{2}{3} = \frac{16}{p}$
 24



Use the given information to find the indicated value.

- GIVEN:** $\triangle CDX \sim \triangle GNZ$, the perimeter of $\triangle CDX$ is 48 feet, $CX = 14$ feet, and $GZ = 58.8$ feet.

Find the perimeter of $\triangle GNZ$. 201.6 ft

$$\frac{14}{58.8} = \frac{48}{p}$$

- GIVEN:** $\triangle ABC \sim \triangle DEF$, $\triangle ABC$ is isosceles, $\triangle ABC$ has a perimeter of 18 inches and a leg of length 5 inches, and the base of $\triangle DEF$ is 34.4 inches long.

Find the perimeter of $\triangle DEF$.

$$\frac{5}{34.4} = \frac{18}{p}$$

77.4 in

